



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,744	10/23/2003	Masahiro Yokota	244170US2S CONT	5332
22850	7590	05/31/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			DONG, DALEI	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

4A

Office Action Summary

Application No.

10/690,744

Applicant(s)

YOKOTA ET AL.

Examiner

Dalei Dong

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-106 is/are pending in the application.
- 4a) Of the above claim(s) 1-7, 21, 23-106 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-20 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Response filed on May 1, 2006, has been entered and acknowledged by the Examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. Claims 8-20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent No. 2000-251768 to Hasegawa in view of Japanese Patent No. 2000-138029 to Koyanagi.

Regarding to claim 8, Hasegawa discloses in Figures 1-19, a method of manufacturing an image display apparatus which comprises an envelope having a front substrate (4) and a rear substrate (2) opposed to each other and individually have peripheral edge portion sealed together, the method comprising: arranging an electrically conductive sealing member (9 and 14) along a sealed portion between the respective peripheral edge portions of the front substrate (4) and the rear substrate (2).

However, Hasegawa does not disclose sealing the sealed portion by supplying current to and melting the sealing member.

Koyanagi teaches in Figure 1, a method of manufacturing an image display apparatus comprising: sealing the sealed portion by supplying current to and melting the sealing member for the purpose of maintaining the vacuum of the envelope and uniformly sealing the display apparatus.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the current melting sealing process of Koyanagi for the method of manufacturing display apparatus of Hasegawa in order to maintain the vacuum of the envelope and uniformly seal the display apparatus.

Regarding to claim 9, Hasegawa discloses in Figures 1-19, arranging a frame-shaped side wall (3) between the respective peripheral edge portions of the front substrate (4) and the rear substrate (2), and providing the sealing member (9 and 14) between the sidewall (3) and at least one of the front (4) and rear substrates (2).

However, Hasegawa does not disclose supplying current to the sealing member so to melt the sealing member.

Koyanagi teaches in Figure 1, a method of manufacturing an image display apparatus comprising: sealing the sealed portion by supplying current to and melting the sealing member for the purpose of maintaining the vacuum of the envelope and uniformly sealing the display apparatus.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the current melting sealing process of

Koyanagi for the method of manufacturing display apparatus of Hasegawa in order to maintain the vacuum of the envelope and uniformly seal the display apparatus.

Regarding to claim 10, the Examiner asserts that supplying DC current or voltage to an electrical apparatus is old and well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art to utilize DC current or voltage for the high voltage melting method of Robertson, and the motivation to combine is the same as above.

Regarding to claim 11, the Examiner asserts that supplying AC current or voltage in the commercial frequency band is old and well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art to utilize AC current or voltage for the high voltage melting method of Robertson, and the motivation to combine is the same as above.

Regarding to claim 12, the Examiner asserts that supplying AC current or voltage in the frequency band higher than the commercial frequency band is old and well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art to utilize AC current or voltage in the frequency band higher than the commercial frequency for the high voltage melting method of Robertson, and the motivation to combine is the same as above.

Regarding to claim 13, Hasegawa discloses in Figures 1-19, indium or an alloy containing indium is used as the sealing member .

Regarding to claim 14, Koyanagi teaches in Figure 1, the sealing member (4) is arranged in the form of a frame along the sealed portion on the peripheral edge of the envelope and is formed having two electrode portion (5) protruding outward from the sealed portion, the sealing member being supplied with current through the electrode portions and the motivation to combine is the same as above.

Regarding to claim 15, Koyanagi teaches in Figure 1, the cross section of each of the electrode portion is greater than the cross section of any other portion of the sealing member (4) and the motivation to combine is the same as above.

Regarding to claim 16, Koyanagi teaches in Figure 1, the two electrode portions (5) are arranged individually in positions symmetrical with respect to the peripheral edge portions of the envelope.

Regarding to claim 17, Hasegawa discloses in Figures 1-19, setting the temperature of the front substrate (4) and the rear substrate (2) to be lower than the melting point of the sealing member (9 and 14) at a point of time immediately before heating the sealing member (9 and 14).

Regarding to claim 18, Hasegawa discloses in Figures 1-19, the difference between the melting point of the sealing member and the temperature of the front substrate (4) and the rear substrate (2) at the point of time immediately before the sealing member (9 and 14) is supplied with current is set with the range from 20 to 150 degree Celsius.

Regarding to claim 19, Hasegawa discloses in Figures 1-19, the sealing the sealed portion (9 and 14) includes supplying current to the sealing member while arranging the envelope in a vacuum atmosphere.

Regarding to claim 20, Hasegawa discloses in Figures 1-19, the front substrate (4) and the rear substrate (2) are cooled to a temperature lower than the melting point of the sealing member (9 and 14) without failing to maintain the vacuum atmosphere after the substrates are heated and degassed in the vacuum atmosphere, the sealing member (9 and 14) is heated and melted only, and the heating the sealing member is stopped so that heat from the sealing member (60) can be conducted to the front substrate (12) and the rear substrate (14) to cool and solidify the sealing member (60), whereby the envelope is sealed.

Regarding to claim 22, Hasegawa discloses in Figures 1-19, an electron source and a phosphor are arranged in the envelope as the peripheral edge portion of the front

Art Unit: 2879

substrate (4) or the rear substrate (2) is sealed, whereby the envelope is kept vacuum inside.

Response to Arguments

4. Applicant's arguments filed May 1, 2006 have been fully considered but they are not persuasive.

In response to Applicant's argument that prior art of record taken alone or in combination fails to teach or suggest sealing the sealed portion by supplying current to and melting the sealing member, the Examiner respectfully disagree. The Examiner asserts that Koyanagi reference specifically teaches the glass frit is connected to a high resistance wiring 5 which acts as a heating means. Albeit, the Koyanagi reference may not intended to supply the current to the sealing member, the current is supplied to the sealing member via the connection between high resistance wiring 5 and the sealing member. Thus, the Examiner asserts that the prior art of record teaches the claimed invention and maintains the rejection.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (571)272-2370. The examiner can normally be reached on 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571)272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2879

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



D.D.

May 24, 2006



Karabi Guharay
Primary Examiner
Art Unit 2879